

# CR:800A Sound Level Meter

## Specifications & Ordering Information August 2000

Please note that the information contains refers to Version 2 of the CR:800A Sound Level Meter. For details of v1.07 please contact your local representative.



# CR:800A Sound Level Meter Specifications

The information contained in this document is in addition to that supplied in the CR:800A Sound Level Meter datasheet and the CR:800A Sound Level Meter User Manual.

For full specifications and performance information, please refer to the CR:800A Sound Level Meter User Manual.

Please contact Cirrus Research plc for further information.

In order to take account of a policy of continual development, Cirrus Research plc reserves the right to change any of the information contained in this or any other document without prior notice

## Specifications

### Standardisation

Sound level meter	IEC 60651:1979 Type 1 I or Type 2 I
Integrating Averaging Sound Level Meter	IEC 60804:1985 Type 1 or Type 2
Combined standard	IEC 61672:1999 Class 1 or 2
1:1 & 1:3 Octave Band Filters	IEC 61260 Class 1

### Microphone

Type 1	MK: 224 pre-polarized Free-field ½" Condenser Microphone
Frequency range	5Hz - 16kHz +/- 2dB
Type 2	MK: 216 pre-polarized Free-field ½" Condenser Microphone
Nominal sensitivity	50mV/Pa (30dB re 1V per Pa)
Capacitance	18pF

### Microphone Preamplifier

Type	MV: 200C
Extension cables	ZL: 202 2m
	ZL: 205 5m
	ZL: 210 10m
	ZL: 220 20m

### Time Weightings

'F' (Fast)	to IEC 60651:1979 Type 1 I or Type 2 I
'S' (Slow)	
'I' (Impulse)	

### Frequency Weightings

Channel 1	'A', 'C' or 'Z'
Channel 2	'C'

Z weighting is a flat frequency response of 10Hz – 20kHz  $\pm 1.5$ dB excluding microphone response. When filters are selected the 'Z' weighting is used.

### Amplitude Weighting

Q=3 True Energy Integration

### Measurement Range

Broadband	21dB(A) to 140dB(A) Type 1 30dB(A) to 140dB(A) Type 2 143dB(C) Peak (80 to 140dB Range)	1:1
Octave Band Filters	19dB(Z) to 140dB(Z)	
1:3 Octave Band Filters	14dB(Z) to 140dB(Z)	

### Range Steps

20-80, 30-90, 40-100, 50-110, 60-120, 70-130, 80-140

### Noise Floor

Broadband	18dB(A) Type 1, 25dB(A) Type 2
1:1 Octave Band Filters	12dB(Z) @ 1kHz 1:1 Octave Band
1:3 Octave Band Filters	7dB(Z) @ 1kHz 1:3 Octave Band

### Available Measurements

The following metrics can be displayed for a recorded session and stored:

#### Broadband Mode

$L_{CPeak}$   
 $L_{AF}, L_{AS}, L_{AI}, L_{CF}, L_{CS}, L_{CI}, L_{ZF}, L_{ZS}$  or  $L_{ZI}$  (not stored)  
 $L_{AFmax}, L_{ASmax}, L_{AImax}, L_{CFmax}, L_{CSmax}, L_{CImax}, L_{ZFmax}, L_{ZSmax}$  or  $L_{ZImax}$   
 $L_{Aeq}, L_{Ceq}$ , or  $L_{Zeq}$   
 $L_{AE}, L_{CE}$ , or  $L_{ZE}, L_{A1eq}, L_{C1eq}$ , or  $L_{Z1eq}, L_{AFTeq}$   
 $L_{0.1}$  to  $L_{99.9}$  (six simultaneous user-selected values available)  
 Run time to resolution of 1sec up to 100 days.  
 Date and time  
 1 second Short  $L_{eq}$  Time History

#### Filter mode

1:1 or 1:3 filter selected  
 Selected frequency  
 Filtered  $L_{ZS}, L_{ZF}$  or  $L_{ZI}$  (not stored)  
 Filtered  $L_{Zeq}$   
 $L_{Aeq}, L_{Ceq}, L_{Zeq}$   
 Run time to resolution of 1sec up to 100 days.  
 Date and time

### Memory

128K of memory that allows storage of data sessions as follows:  
 Up to 270 sets of data in broadband mode  
 Up to 160 sets of data in octave filter mode  
 Up to 70 sets of data in third-octave mode.  
 Up to 252,000 1 second Time History samples

Or pro-rata storage for mixed measurements.

### Automatic Measurements

The unit can be set to record and store data over fixed times of  
 1 minute      5 minutes  
 10 minutes    15 minutes  
 30 minutes    1 hour  
 8 hours        12 hours  
 User defined period

Automatic repeat of Broadband Measurements from 2 to 99 measurements

When filter mode is selected the CR:800A will sweep between the filter bands and store the scanned data. The unit will default to a minimum of one minute sweep for octave and three minutes for third octave if lower run times are selected.

### Dimensions

255mm x 75mm x 25mm

### Display

2 x 16 Character LCD with optional backlight

### Weight

450 gms

### Power

2 x Alkaline LR6/AA

### Battery Life

Broadband	Typically 26 hours
Filter Mode	Typically 14 hours

Battery voltage is continuously monitored and warning is given on display of impending low battery condition. When batteries approach end of life the unit will store any data required and switch off automatically.

### Environmental

Temperature	Operating	-10°C to +50°C
	Storage	-20°C to +55°C

### External Connection

#### RS232 Communications

8 pin mini Din socket with supplied ZL:800A Cable

#### Optional

AC out.	Weighted by the channel 2 selected weighting. Range adjusted.
DC out.	DC rms signal of the above with time constant as selected.

AC & DC Outputs should be loaded by an impedance exceeding 10kohm.

#### Power

3v to 5v DC (40mA to 70mA @ 5v input)  
1.3mm coaxial socket

### Software Support

Deaf Defier2 for Windows

### System Requirements

The Deaf Defier for Windows requires the following:

Microsoft Windows95 or later  
CD-ROM  
VGA or higher resolution monitor, Super VGA Recommended  
Microsoft compatible mouse or pointing device

### Downloading Data

To download data from a CR:800A Sound Level Meter, the PC must have available a free 9 Pin

RS232 Communications port that is not used by any other program. Deaf Defier for Windows requires data files that have been downloaded from a Cirrus Research plc CR:800A Sound Level Meter.

Large amounts of data may be created by the Deaf Defier software and therefore sufficient hard-disk space must be available for the storage of these files.

The Deaf Defier for Windows software also incorporates a database of hearing protection products, such as ear plugs and muffs. This database is used by the software to calculate the noise exposure of the wearer and the maximum possible protection provided by each product. The defender data can be edited and updated at any time, and new information added as required.

Note that this feature is only available when 1:1 octave band data has been downloaded, and therefore is only provided by instruments that have been fitted with this filter option.

Although example data is provided with the software, Cirrus Research plc accept no responsibility for any misuse or misinterpretation of measurements given. Always consult the supplier of the hearing defenders to ensure correct use.

## CR:800A Sound Level Meter Order Form

Item	Description		Unit Cost	Total
CR: 800A	Sound Level Meter			
MO: 800/1	Upgrade to Type 1			
MO: 800/2	Upgrade to 1:1 Octave Band Filters			
MO: 800/3	Upgrade to 1:1 & 1:3 Octave Band Filters			
MO: 800/5	Remote Preamplifier for Type 2 Instruments			
CR: 513A	Acoustic Calibrator			
UA: 237	Windshield			
CK: 801	Measurement Kit Type 2 Broadband Only			
CK: 802	Measurement Kit Type 2 with 1:1 Octave Filters			
CK: 803	Measurement Kit Type 1 with 1:1 Octave Filters			
CK: 804	Measurement Kit Type 1 with 1:1 & 1:3 Octave Filters			
CK: 805	Measurement Kit Type 1 Broadband Only			
CK: 806	Measurement Kit Type 2 with 1:1 & 1:3 Octave Filters			
ZL: 202	2m Microphone Cable			
ZL: 205	5m Microphone Cable			
ZL: 210	10m Microphone Cable			

**Notes:**

Type 2 Instruments need the MO:800/5 Option to allow microphone extension cables to be fitted.

See page 1 for the contents of the measurement kits.

<b>Sub Total</b>	
Carriage	
<b>Total</b>	